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ST-A per ONR ltr, 26 Oct 1977

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PRINCETON, NEW JERSEY
SCHOOL OF ENGINEERING, JOHN C. GREEN FOUNDATION

DEPARTMENT OF AERONAUTICAL ENGINEERING
THE JAMES FORRESTAL RESEARCH CENTER

May 2, 1956

FC

Commanding Officer
Office of Naval Research
Air Branch/Code 461
Department of the Navy
Washington 25, D. C.

Subject: Model Study of Dynamic Stability of Helicopter -- Status Report Covering the month of April 1956.

Contract N6 onr-27015

H04S Simulation Program:

Preliminary data on the period and damping of the model has been obtained, and additional flights are being made to investigate the effects of varying certain model parameters.

Forward Flight Facility:

The design of the carriage system is now in progress. Initial effort in the design is to determine the structural configuration which best satisfies all the design requirements.

The computer study, for ascertaining the performance of the horizontal servo system, is continuing after some delay due to mechanical imperfections in the power drive system.

Induced Flow Studies:

The test program as outlined in the March 5 Progres Report has been completed. The analysis of the oscillograph records has also been completed and the studies of the smoke pictures are continuing. These latter studies are very time consuming and it is expected that another month will be required to complete this phase. Unless the results of these studies indicate otherwise, no further testing is anticipated.

Aeroelastic Investigation:

Calculations were performed to determine the effects on the flutter characteristics, of a spanwise variation, of the shear center. Resulting values show an increased accuracy in the prediction of the flutter-speed. For example, for configuration 5 treated in Aeronautical Engineering Report No. 333 of December 1955, the predicted flutter speed is reduced from 46.8 to 43.5 radians per second; the experimental values ranged from 41 to 42 radians per second.

Very truly yours,

Leonard Goland

LEONARD GOLAND
Chief Project Engineer

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